## INTERNATIONAL SEARCH REPORT

/CA 03/02031

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 F01C1/20 F01C11/00 F01C1/08 F01C19/00

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 F01C F04C

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

## EPO-Internal

C. DOCUME	ENTS CONSIDERED TO BE RELEVANT	 	·
Category °	Citation of document, with indication, where appropriate, of the relevant passages		Relevant to claim No.
Х	DE 25 50 360 A (ENGLAND WILL CLARKE) 12 May 1977 (1977-05-12)		1-10,12
Α	figures 7,13-15,22,27,30	į	11
•	page 18, paragraph 2 page 20, paragraphs 2,3 		
X	US 3 724 427 A (SAUDER K) 3 April 1973 (1973-04-03)	٠	1,2,4-6, 10,12,13
Υ	figures 3,9,10 column 4, line 24 - column 5, line 25 column 7, line 35 - column 8, line 36		16-19
X	US 3 989 011 A (TAKAHASHI MINORU) 2 November 1976 (1976-11-02) figures 1-5	-	1-6,10, 12
	column 2, line 37 - column 4, line 11 column 4, line 25 - line 41 column 5, line 11 - line 30		
	-/	- 9	•

Further documents are listed in the continuation of box C.	Patent family members are listed in annex.
Special categories of cited documents:      A" document defining the general state of the art which is not considered to be of particular relevance      E" earlier document but published on or after the international tiling date      C" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)      O' document referring to an oral disclosure, use, exhibition or other means      P" document published prior to the International filing date but later than the priority date claimed	<ul> <li>*T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention</li> <li>*X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone</li> <li>*Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.</li> <li>*&amp;* document member of the same patent family</li> </ul>
Date of the actual completion of the international search  21 April 2004	Date of mailing of the international search report  27/04/2004
Name and mailing address of the ISA  European Patent Office, P.B. 5818 Patentlaan 2  NL - 2280 HV Rijswijk  Tel. (+31-70) 340-2040, Tx. 31 651 epo ni,  Fax: (+31-70) 340-3016	Authorized officer  Lequeux, F

## INTERNATIONAL SEARCH REPORT

rmation on patent family members

at	l Application No
TOT/CA	4 03/02031

Patent document cited in search report		Publication date		Patent family member(s)	Publication date
DE 2550360	Α	12-05-1977	DE	2550360 A1	12-05-1977
US 3724427	Ā	03-04-1973	GB	1359930 A	17-07-1974
US 3989011	Α	02-11-1976	JР	50102711 A	14-08-1975
GB 1392190	Α	30-04-1975	NONE	_	
US 3782110	Α	01-01-1974	JP JP	48046714 A 54019927 B	03-07-1973 19-07-1979
AT 311178	В	12-11-1973	NONE		
DE 2321639	. A	07-11-1974	DE	2321639 A1	07-11-1974
US 5032068	A	16-07-1991	EG IL MX PL RU	18665 A 92017 A 172142 B 165391 B1 2027862 C1	28-02-1994 15-11-1992 06-12-1993 30-12-1994 27-01-1995
US 2002014069	A1	07-02-2002	US US US AT AT AU BR CA	6336317 B1 2003106301 A1 2003228237 A1 263313 T 252685 T 5242599 A 9912651 A 2338347 A1	08-01-2002 12-06-2003 11-12-2003 15-04-2004 15-11-2003 21-02-2000 02-05-2001 10-02-2000
		· · · ·	DE EP EP EP JP WO	69912288 D1 1270899 A1 1270900 A1 1101024 A1 2002521608 T	27-11-2003 02-01-2003 02-01-2003 23-05-2001 16-07-2002 10-02-2000